

THE  
AMERICAN JOURNAL  
OF  
PHYSIOLOGY

VOLUME 142

BALTIMORE, MD.  
1944

THE JOURNAL OF THE

ROYAL SOCIETY OF MEDICINE

1901

21

Medical Lab  
Notes

## CONTENTS

### No. 1. AUGUST, 1944

The Design of the Ballistocardiograph. <i>John L. Nickerson and Howard J. Curtis</i> . . .	1
A Study of the Substances in Blood Serum and Platelets which Stimulate Smooth Muscle. <i>Marjorie Bass Zucker</i> . . .	12
The Rate of Entrance of Radio Sodium into the Aqueous Humor and Cerebrospinal Fluid. <i>Maurice B. Visscher and Charles Carr</i> . . .	27
The Influence of Temperature on Spinal Cord Damage Caused by Asphyxiation. <i>A. van Harreveld and D. B. Tyler</i> . . .	32
The Hemoglobin Concentration of the Blood of Intact and Splenectomized Dogs under Pentobarbital Sodium Anesthesia with Particular Reference to the Effect of Hemorrhage. <i>David T. Carr and Hiram E. Essex</i> . . .	40
Augmentation of Left Coronary Inflow with Elevation of Left Ventricular Pressure and Observations on the Mechanism for Increased Coronary Inflow with Increased Cardiac Load. <i>Donald E. Gregg and Robert E. Shipley</i> . . .	44
Respiratory Effects on the Filling of the Ventricles during a Prolonged Diastole. <i>Mary C. Patras, John M. Brookhart and T. E. Boyd</i> . . .	52
Tissue Electrolyte at Low Atmospheric Pressures. <i>Daniel C. Darrow</i> . . .	61
Depression of the Normal Erythrocyte Number by Soybean Lecithin or Choline. <i>John Emerson Davis</i> . . .	65
Palmar Skin Resistance (P.S.R.) During a Standard Period of Controlled Muscular Activity as a Measure of Physical Fitness and Fatigue. <i>A. H. Ryan and E. L. Ranssen</i> . . .	68
Responses of Blood Capillaries to Acute Hemorrhage in the Rat. <i>B. W. Zweifach, B. E. Lowenstein and Robert Chambers</i> . . .	80
Total Circulating Protein and Hemoglobin in the Growing Rat. <i>Jack Metcalf and Cutting B. Favour</i> . . .	94
The Maintenance of a Normal Serum Calcium by the Parathyroid Gland in Nephrectomized Dogs. <i>E. P. Monahan and Smith Freeman</i> . . .	104
The Synergistic Effect of Caffeine upon Histamine in Relation to Gastric Secretion. <i>J. A. Roth and A. C. Ivy</i> . . .	107
Influence of Oxytocin (Pitocin) upon the Heart and Blood Pressure of the Chicken, Rabbit, Cat, Dog and Turtle. <i>Robert A. Woodbury and Benedict E. Abreu</i> . . .	114
The Sensitivity of the Respiratory Center to Hydrogen Ion Concentration. <i>M. Garcia Banus, Harvey H. Corman, Vincent P. Perlo and George L. Popkin</i> . . .	121
Acid-Humoral Intermediation in the Rectus Abdominis of the Frog. <i>Robert Gesell, Arnold Mason and Charles Brassfield</i> . . .	131
Energy Expenditure in Swimming. <i>Peter V. Karpovich and Nathan Millman</i> . . .	140
Radioactive Phosphorus Studies on Hexosemonophosphate Metabolism in Resting Muscle. <i>Jacob Sacks</i> . . .	145

### No. 2. SEPTEMBER, 1944

The Influence of Glycotropic Substances on Survival of the Primitive Respiratory Center in the Ischemic Rat Head. <i>Wm. A. Hiestand, Robert D. Tschirgi and Helen Rogers Miller</i> . . .	153
Circulatory Changes following the Subcutaneous Injection of Histamine in Dogs. <i>Ingrith Jokanson Deyrup</i> . . .	158
Studies on the Mechanism of Cobalt Polycythemia. <i>Charles O. Warren, Quinton D. Schubmehl and I. Robert Wood</i> . . .	173
The Blood Picture of Iron and Copper Deficiency Anemias in the Rabbit. <i>Sedgwick E. Smith, Mary Medicott and G. H. Ellis</i> . . .	179

The Influence of Glucose Renal Tubular Reabsorption and P-Aminohippuric Acid Tubular Excretion on the Simultaneous Clearance of Ascorbic Acid. <i>Ewald E. Selkurt</i>	182
The Effect of Adrenal Cortical Extract on the Resistance of Non-Adrenalectomized Rats to Peptone Shock. <i>Dwight J. Ingle</i>	191
The Effect of Various Conditions on the Respiration of Rat Heart Muscle in Vitro. <i>Frederick Bernheim and Mary L. C. Bernheim</i>	195
Some Properties of Maximal and Submaximal Exercise with Reference to Physiological Variation and the Measurement of Exercise Tolerance. <i>Craig Taylor</i>	200
Hemolytic Depression of the Erythrocyte Number by the Feeding of Fat with Choline. <i>John Emerson Davis</i>	213
Stimulation of Denervated Skeletal Muscle with Alternating Current. <i>F. S. Grodins, S. L. Osborne, F. R. Johnson and A. C. Ivy</i>	216
The Effect of Appropriate Electrical Stimulation on Atrophy of Denervated Skeletal Muscle in the Rat. <i>F. S. Grodins, S. L. Osborne, F. R. Johnson, S. Arana and A. C. Ivy</i>	222
The Influence of Muscle Pain on Cortically Induced Movements. <i>E. Gellhorn and L. Thompson</i>	231
Fasting and Gluconeogenesis in the Kidney of the Eviscerated Rat. <i>Sidney Roberts and Leo T. Samuels</i>	240
The Diuretic Effect of Gelatin Solutions. <i>C. E. Bridger, S. E. Smathers, C. W. Cotterman, J. T. Dameron and J. Maxwell Little</i>	246
Work in the Heat as Affected by Intake of Water, Salt and Glucose. <i>G. C. Pitts, R. E. Johnson and F. C. Consolazio</i>	253
The Effect of Anemic Anoxia on the Motility of the Small and Large Intestine. <i>Edward J. Van Liere, David W. Northup and J. Clifford Stickney</i>	260
The Effect of Changes in Concentration of Pantothenate on the Work Output of Perfused Frog Muscles. <i>N. W. Shock and W. H. Sebrell</i>	265
The Effect of Vitamins of the B Complex on the Work Output of Perfused Frog Muscles. <i>Nathan W. Shock and W. H. Sebrell</i>	270
The Effect of Dicumarol (3,3'-Methylenebis [4-Hydroxycoumarin]) on Platelet Adhesiveness. <i>Maryloo Spooner and Ovid O. Meyer</i>	279
The Oxygen Consumption of Normal Rat Liver and Diaphragm Muscle in Lymph Taken From Dogs Before and After Severe Burns. <i>Jytte Muus, Esther Hardenbergh and Cecil K. Drinker</i>	284
Changes in Phosphate of Muscle During Tourniquet Shock. <i>Jesse L. Bollman and Eunice V. Flock</i>	290

## No. 3. OCTOBER, 1944

Studies on Mechanisms Involved in Shock and Its Therapy. <i>E. Mylon, C. W. Cashman, Jr. and M. C. Winternitz</i>	299
Further Observations on Factors Influencing Hypoxic Resistance of Mice. <i>Wm. A. Hiestand and Helen Rogers Miller</i>	310
A Comparison of the Renotropic with the Androgenic Activity of Various Steroids. <i>Charles D. Kochakian</i>	315
The Site of Metabolism of Progesterone in the Rabbit. <i>Charles D. Kochakian, Arthur L. Haskins, Jr. and Robert A. Bruce</i>	326
Visual Thresholds as an Index of Physiological Imbalance During Anoxia. <i>R. A. McFarland, M. H. Halperin and J. I. Niven</i>	328
Fatigue of the Depressor Reflex. <i>Harriet Mylander Maling</i>	350
The Effects of Infusing Glycin and of Varying the Dietary Protein Intake on Renal Hemodynamics in the Dog. <i>Robert F. Pitts</i>	355
Cardiovascular Changes Resulting from Severe Scalds. <i>Irvine H. Page</i>	366
The Response of Mammalian Smooth Muscle to Oxygen at High Pressure and Its Possible Relationship to Oxygen Poisoning of Respiratory Enzyme Systems. <i>John W. Bean and David F. Bohr</i>	379

The Innervation of the Interosseous Muscles and the Mechanism of the "Toe Spreading Reflex" of the Hind Limb in the Cat. <i>William L. Straus, Jr. and James M. Sprague</i> .....	391
The Oxygen Consumption of Eye Muscles of Thyroidectomized and Thyroxin-injected Guinea Pigs. <i>George K. Smelser</i> .....	396
The Experimental Production of a Hyperchromic Anemia in Dogs Which Is Responsive to Anti-pernicious Anemia Treatment. <i>John Emerson Davis</i> .....	402
The Rate of Transcapillary Exchange of Sodium in Normal and Shocked Dogs. <i>Alfred Gellhorn, Margaret Merrell and Robert M. Rankin</i> .....	407
Reflexes in the Anterior Tibial Muscle after Cord Asphyxiation. <i>A. van Harreveld</i> .....	428
Induced Variations in Cell Fluid Volume in the Study of Shifts of Body Fluid. <i>C. T. Ashworth and A. J. Gill</i> .....	435
Histochemical Changes in the Kidney During Diuresis and Dehydration. <i>John M. Weller</i> .....	443
Mechanisms Underlying Electrocardiographic Changes Observed in Anoxia. <i>A. Sidney Harris and Walter C. Randall</i> .....	452
Observations on Methods of Increasing Resistance to Oxygen Poisoning and Studies of Accompanying Physiological Effects. <i>Alvan L. Barach, Morris Eckman, Enid Tribe Oppenheimer, Charles Rumsey, Jr. and Maz Soroka</i> .....	462
Evidence That the Physiologic Normal Hemoglobin Value for Adult Dog Blood is 18 Grams Per 100 CC. <i>Susan Gower Smith</i> .....	476

## NO. 4. NOVEMBER, 1944

Blood pH during Decompression. <i>Robert W. Clark, Clyde Marshall and Leslie F. Nims</i> .....	483
The Rabbit Ovulating Factor of Plant Juice. <i>James T. Bradbury</i> .....	487
Ischemic Compression Shock, with an Analysis of Local Fluid Loss. <i>Harold D. Green, Robert M. Dworkin, Robert J. Antos and Georges A. Bergeron</i> .....	494
Further Observations on the Water and Fat Content of the Skin and Body of the Albino Rat on a High Fat Diet. <i>Winfrey Wynn and John Haldi</i> .....	508
The Effects of Potassium on the Synthesis of Acetylcholine in Brain. <i>John H. Welsh and Jane E. Hyde</i> .....	512
The Production of Shock by Callicrein. <i>W. W. Westerfeld, James R. Weisiger, Benjamin G. Ferris, Jr. and A. Baird Hastings</i> .....	519
Callicrein Inactivators. <i>Lytt I. Gardner, W. W. Westerfeld and James R. Weisiger</i> .....	541
Glycolysis in the Parts of the Central Nervous System of Cats and Dogs during Growth. <i>Annette Chesler and Harold E. Himwich with the technical assistance of Shirley Ferris</i> .....	544
Isotopic Tracer Studies on the Movement of Water and Ions between Intestinal Lumen and Blood. <i>Maurice B. Visscher, E. Stanton Fetcher, Jr., Charles W. Carr, Harry P. Gregor, Marian Sedin Bushey and Dorothy Erickson Barker</i> .....	550
The Survival of Dogs Treated with Neosynephrin during the Production of Hemorrhagic Shock. <i>David F. Opdyke</i> .....	576
A Study of the Conversion of Fibrinogen to Fibrin. <i>Kenneth C. Robbins</i> .....	581
Changes of Cerebral Circulation Induced by Labyrinthine Stimulation. <i>E. A. Spiegel, G. C. Henny and H. T. Wycis</i> .....	589
The Effect of Positive and Negative Intrathoracic Pressure on Cardiac Output and Venous Pressure in the Dog. <i>J. P. Holl</i> .....	594
The Effect of L. Casei Factor ("Folic Acid") on Blood Regeneration following Hemorrhage in Rats. <i>Arthur Kornberg, Herbert Tabor and W. H. Sebrell</i> .....	604
The Effect of Anoxic and Anemic Anoxia on the Motility of the Small Intestine and the Influence of an Epinephrine-Potentiating-Agent. <i>Edward J. Van Liere, David W. Northup and J. Clifford Stickney</i> .....	615
Some Factors Influencing Phosphate Turnover in Muscle. <i>Jacob Sacks</i> .....	621
Concentration of Potassium in Serum and Response to Vagal Stimulation in the Dog. <i>H. E. Hoff, D. G. Humm and A. W. Winkler</i> .....	627

## No. 5. DECEMBER, 1944

Modified Spontaneous Activity Rhythms in Rats. <i>Ludwig G. Browman</i> .....	633
The Relation of Adrenalin and of the Carotid Sinus to the Hyperglycemia of Shock. <i>E. Mylon, C. W. Cashman, Jr. and M. C. Winternitz</i> .....	638
The Renal Reabsorptive Mechanism for Inorganic Phosphate in Normal and Acidotic Dogs. <i>Robert F. Pitts and Robert S. Alexander</i> .....	648
Spontaneous Activity in Relation to Diet in the Albino Rat. <i>Erma A. Smith and R. M. Conger</i> .....	663
Experimental Chronic Hypertension in the Rabbit. <i>Arthur Grollman</i> .....	666
Filtration Across the Vascular Wall as a Function of Several Physical Factors. <i>Chester Hyman</i> .....	671
Mechanism of the Effect of Hyperthyroidism on Cardiac Glycogen. <i>Louis E. Moses</i> .....	686
The Oxygen Tension of Arterial Blood and Alveolar Air in Normal Human Subjects. <i>Julius H. Comroe, Jr. and Robert D. Dripps, Jr.</i> .....	700
Factors Affecting the Determination of Oxygen Capacity, Content and Pressure in Human Arterial Blood. <i>F. J. W. Roughton, R. C. Darling and W. S. Root</i> .....	708
Influence of Dying Gasps, Yawns and Sighs on Blood Pressure and Blood Flow. <i>Robert A. Woodbury and Benedict E. Abreu</i> .....	721
Hemoglobin Concentrations, Red Cell Counts and Erythrocyte Volumes of College Women of the North Central States. <i>Margaret A. Ohlson, Dena Cederquist, Eva G. Donelson, Ruth M. Leverton, Gladys Kinsman Lewis, Williamina Armstrong Hinwisch and May S. Reynolds</i> .....	727
The Affinity of Hemoglobin for Oxygen at Sea Level and at High Altitudes. <i>Humberto Aste-Salazar and Alberto Hurtado</i> .....	733
Improved Measurement of the Effect of Intravenously Injected Adrenalin on the Respiratory Exchange by Colorimetric Determination of Carbon Dioxide in Ex- pired Air and Continuous Graphic Registration of Oxygen Consumption. <i>Richard J. Jones and Fred R. Griffith, Jr.</i> .....	744
Index.....	759

